

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

DAVID L. FEIGENBAUM
FISH & RICHARDSON P.C.
P.O. BOX 1022
MINNEAPOLIS, MN 55440

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing (day/month/year)	
Applicant's or agent's file reference 12144-029WO1	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US2006/047524	International filing date (day/month/year) 13 December 2006
Applicant AIRVANA, INC.	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver Telephone No. 571-272-7774
---	--

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

DAVID L. FEIGENBAUM
FISH & RICHARDSON P.C.
P.O. BOX 1022
MINNEAPOLIS, MN 55440

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing
(day/month/year) **26 MAY 2009**

Applicant's or agent's file reference

12144-029WO1

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.

PCT/US2006/047524

International filing date
(day/month/year)

13 December 2006

Applicant

AIRVANA, INC.

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Authorized officer:

Blaine R. Copenheaver

Telephone No. 571-272-7774

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 12144-029WO1	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2006/047524	International filing date (day/month/year) 13 December 2006	(Earliest) Priority Date (day/month/year) 16 December 2005
Applicant AIRVANA, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II)

3. ☐ **Unity of invention is lacking** (see Box No. III)

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant
☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☐ the text is approved as submitted by the applicant
☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 1
☒ as suggested by the applicant
☐ as selected by this Authority, because the applicant failed to suggest a figure
☐ as selected by this Authority, because this figure better characterizes the invention
 b. ☐ none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2006/047524

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

The radio node controller of one subnet sends a communication to an access terminal over a control channel through the infrastructure of another subnet. The radio node controller maintains an open traffic channel with an access terminal when the access terminal moves from a coverage area of the first subnet to a coverage area of the second subnet and when the access terminal uses a carrier in the first subnet that cannot be used in the second subnet. In a radio access network including a first and a second subnet, in which the first subnet includes both a first radio node controller and radio nodes that are configured in accordance with one 1xEV-DO standard and the second subnet includes radio nodes configured in accordance with another 1xEV-DO standard, the first radio node controller maintains an open traffic channel with an access terminal when the access terminal moves.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2006/047524

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - H04Q 07/00 (2008.04)

USPC - 370/331

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - H04Q 07/00 (2008.04)

USPC - 370/331

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

MicroPatent

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0214574 A1 (EYUBOGLU et al) 28 October 2004 (28.10.2004) entire document	1-47

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

09 September 2008

Date of mailing of the international search report

26 MAY 2009

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

DAVID L. FEIGENBAUM
FISH & RICHARDSON P.C.
P.O. BOX 1022
MINNEAPOLIS, MN 55440

Date of mailing
(day/month/year)

26 MAY 2009

Applicant's or agent's file reference

12144-029WO1

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US2006/047524

International filing date (day/month/year)

13 December 2006

Priority date (day/month/year)

16 December 2005

International Patent Classification (IPC) or both national classification and IPC

IPC(8) - H04Q 07/00 (2008.04)

USPC - 370/331

Applicant

AIRVANA, INC.

1. This opinion contains indications relating to the following items:



Box No. I Basis of the opinion



Box No. II Priority



Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability



Box No. IV Lack of unity of invention



Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement



Box No. VI Certain documents cited



Box No. VII Certain defects in the international application



Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Date of completion of this opinion

09 September 2008

Authorized officer:

Blaine Copenheaver

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2006/047524

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
☒ the international application in the language in which it was filed.
☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a)).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ on paper
☐ in electronic form
 - c. time of filing/furnishing
☐ contained in the international application as filed
☐ filed together with the international application in electronic form
☐ furnished subsequently to this Authority for the purposes of search
4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2006/047524

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	16, 18, 45, 47	YES
	Claims	1-15, 17, 19-44, 46	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-47	NO
Industrial applicability (IA)	Claims	1-47	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-15, 17, 19-44 and 46 lack novelty under PCT Article 33(2) as being anticipated by Eyuboglu et al. (US 2004/0214574 A1; Eyuboglu).

Regarding claim 1, Eyuboglu discloses a method comprising in a radio access network including subnets (Abstract and Fig. 2), in which at least one of the subnets includes a radio node controller (Abstract, Fig. 2 and Paragraphs [0024] and [0028]; has subnets in the RNC), enabling the radio node controller of one subnet to send a communication to an access terminal over a control channel through the infrastructure of another subnet (Abstract, Fig. 2 and Paragraphs [0024], [0028] and [0076]; RNC sends communication to other subnet).

Regarding claim 2, Eyuboglu discloses the method of claim 1 in which the communication comprises packets (Paragraph [0025]; communicates with packets).

Regarding claim 3, Eyuboglu discloses the method of claim 1 in which the infrastructure includes a radio node controller (Abstract and Fig. 2; uses a radio node controller).

Regarding claim 4, Eyuboglu discloses the method of claim 1 in which the access terminal is in an idle state (Paragraph [0018]; terminal is in a dormant state).

Regarding claim 5, Eyuboglu discloses the method of claim 1 in which the communication sent over the control channel comprise a paging message (Paragraph [0034]; uses paging messages).

Regarding claim 6, Eyuboglu discloses the method of claim 1 in which the communication sent over the control channel comprise a UATI-Assignment message (Paragraph [0096]; uses a UATI assignment message).

Regarding claim 7, Eyuboglu discloses the method of claim 1 in which the communication sent over the control channel comprise a TrafficChannelAssignment message (Paragraph [0035]; uses a TrafficChannelAssignment message).

Regarding claim 8, Eyuboglu discloses the method of claim 1 further comprising notifying, by the access terminal, the radio node controller of sectors that are visible to the access terminal (Paragraph [0025]; the RNC has sectors visible to other RNCs and RNCs in the radio access network).

Regarding claim 9, Eyuboglu discloses the method of claim 1 further comprising notifying, by the access terminal, the radio node controller of information about pilot strengths of sectors that are visible to the access terminal (Paragraph [0035]; the RNC examines the pilot strengths of sectors).

Regarding claim 10, Eyuboglu discloses the method of claims 8 or 9 in which the notification is sent as a route update message (Paragraph [0033] and [0035]; sends route update messages).

Regarding claim 11, Eyuboglu discloses the method of claim 9 further comprising determining, based on the pilot strengths, to which sectors to send a communication over the control channel to the access terminal (Paragraphs [0035] and [0079-0080]; sends communication based on the pilot strengths).

Regarding claim 12, Eyuboglu discloses the method of claim 11 further comprising enabling the radio node controller to send a communication to the access terminal over a control channel via sectors chosen based on their pilot signal strengths as reported by the access terminal (Paragraph [0035]; sends a communication based on pilot strengths), where at least one chosen sector is located in a different subnet than the radio node controller (Paragraphs [0019] and [0035]; can broadcast from a first and second subnet to a third different subnet).

(Cont. in Supplemental Box)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2006/047524

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Box No. V

2. Citations and explanations:

Regarding claim 13, Eyuboglu discloses a method comprising, in a radio access network including a first and a second subnet, in which the first subnet includes a first radio node controller (20 of Fig. 1; first subnet uses a first RNC), enabling the first radio node controller to maintain an open traffic channel with an access terminal when the access terminal moves from a coverage area of the first subnet to a coverage area of the second subnet and when the access terminal uses a carrier in the first subnet that cannot be used in the second subnet (Paragraph [0080]; the terminal can move from a first coverage area to a second coverage area).

Regarding claim 14, Eyuboglu discloses the method of claim 13 in which each of the carriers comprises an operating frequency (Paragraph [0021]; uses an operating frequency that conforms to the EV-DO standard).

Regarding claim 15, Eyuboglu discloses the method of claim 13 in which radio nodes in the first subnet are configured in accordance with one 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

Regarding claim 17, Eyuboglu discloses a method comprising in a radio access network including a first and a second subnet (Abstract and Figs. 1-2), in which the first subnet includes both a first radio node controller and radio nodes (Fig. 1; has both an RNC and RNs) that are configured in accordance with one 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and the second subnet includes radio nodes configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard), enabling the first radio node controller to maintain an open traffic channel with an access terminal when the access terminal moves from the coverage area of the first subnet to the coverage area of the second subnet (Paragraph [0080]; the terminal can move from a first coverage area to a second coverage area).

Regarding claim 19, Eyuboglu discloses an apparatus comprising a processor (Paragraph [0015]; uses a data processing apparatus), memory (Paragraph [0067]; the RNC Resource Control Agent is responsible for storing session information), including software to provide instructions to the processor to send packets to an access terminal over a control channel through the infrastructure of a subnet that is not the one to which the apparatus belongs (Paragraph [0015]; uses software instructions to allow a terminal access to other subnets).

Regarding claim 20, Eyuboglu discloses the apparatus of claim 19 in which the software provides further instructions to the processor to receive notification by the access terminal of sectors that are visible to the access terminal (Paragraph [0025]; the RNC has sectors visible to other RNs and RNCs in the radio access network).

Regarding claim 21, Eyuboglu discloses the apparatus of claim 19 in which the software provides further instructions to the processor to receive notification from the access terminal of information about pilot strengths of sectors that are visible to the access terminal (Paragraph [0035]; the RNC examines the pilot strengths of sectors).

Regarding claim 22, Eyuboglu discloses the apparatus of claim 21 in which the software provides further instructions to the processor to determine, based on the pilot strengths, to which sectors to send a communication over the control channel to the access terminal (Paragraphs [0035] and [0079-0080]; sends communication based on the pilot strengths).

Regarding claim 23, Eyuboglu discloses the apparatus of claim 22 in which the software provides further instructions to the processor to enable the apparatus to send a communication to the access terminal over a control channel via sectors chosen based on their pilot signal strengths as reported by the access terminal (Paragraph [0035]; sends a communication based on pilot strengths), where at least one chosen sector is located in a different subnet than the apparatus (Paragraphs [0019] and [0035]; can broadcast from a first and second subnet to a third different subnet).

Regarding claim 24, Eyuboglu discloses an apparatus (Abstract) comprising means for sending a communication to an access terminal over a control channel through an infrastructure of a subnet that is not the one to which the apparatus belongs (Paragraph [0015]; uses software instructions to allow a terminal access to other subnets).

Regarding claim 25, Eyuboglu discloses the apparatus of claim 24 further comprising means for receiving notification from the access terminal of sectors that are visible to the access terminal (Paragraph [0025]; the RNC has sectors visible to other RNs and RNCs in the radio access network).

Regarding claim 26, Eyuboglu discloses the apparatus of claim 24 further comprising means for receiving notification from the access terminal of information about pilot strengths of sectors that are visible to the access terminal (Paragraph [0035]; the RNC examines the pilot strengths of sectors).

Regarding claim 27, Eyuboglu discloses the apparatus of claim 26 further comprising means for determining, based on the pilot strengths, to which sectors to send a communication over the control channel to the access terminal (Paragraphs [0035] and [0079-0080]; sends communication based on the pilot strengths).

Regarding claim 28, Eyuboglu discloses the apparatus of claim 27 further comprising means for sending a communication to the access terminal over a control channel via sectors chosen based on their pilot signal strengths as reported by the access terminal (Paragraph [0035]; sends a communication based on pilot strengths), where at least one chosen sector is located in a different subnet than the apparatus (Paragraphs [0019] and [0035]; can broadcast from a first and second subnet to a third different subnet).

(Cont. in Next Supplemental Box)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2006/047524

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Previous Supplemental Box:

Regarding claim 29, Eyuboglu discloses a system comprising, a packet data serving node connected to a network (Abstract and Paragraph [0025]; communicates with packets); at least two subnets, each subnet including, at least one radio node controller connected to the packet data serving node (Figs 1-2; has a RNC connected to the packet node) and, at least one radio node connected to a radio node controller in the same subnet (Figs. 1-2; has two RNs connected to the RNC), in which the radio node controllers are enabled to send a communication to an access terminal over a control channel through the infrastructure of another subnet (Abstract, Fig. 2 and Paragraphs [0024], [0028] and [0076]; RNC sends communication to other subnet).

Regarding claim 30, Eyuboglu discloses the system of claim 29 in which the radio node controllers receive notification from the access terminal of sectors that are visible to the access terminal (Paragraph [0025]; the RNC has sectors visible to other RNs and RNCs in the radio access network).

Regarding claim 31, Eyuboglu discloses the system of claim 29 in which the radio node controllers receive notification from the access terminal of information about pilot strength's of sectors that are visible to the access terminal (Paragraph [0035]; the RNC examines the pilot strengths of sectors).

Regarding claim 32, Eyuboglu discloses the system of claim 31 in which the radio node controllers determine, based on the pilot strength, to which sectors to send a communication over the control channel to the access terminal (Paragraphs [0035] and [0079-0080]; sends communication based on the pilot strengths).

Regarding claim 33, Eyuboglu discloses the system of claim 32 in which the radio node controllers send a communication to the access terminal over a control channel via sectors chosen based on their pilot signal strengths as reported by the access terminal (Paragraph [0035]; sends a communication based on pilot strengths), where at least one chosen sector is located in a different subnet than the radio node controller (Paragraphs [0019] and [0035]; can broadcast from a first and second subnet to a third different subnet).

Regarding claim 34, Eyuboglu discloses an apparatus comprising, a processor (Paragraph [0015]; uses a data processing apparatus), memory (Paragraph [0067]; the RNC Resource Control Agent is responsible for storing session information) including software to provide instructions to the processor to maintain an open traffic channel with an access terminal when the access terminal moves from a coverage area of a first subnet where the apparatus is located to a coverage area of a second subnet and when the access terminal uses a carrier in the first subnet that cannot be used in the second subnet (Paragraphs [0015] and [0080]; uses software instructions to allow a terminal access to other subnets in other coverage areas).

Regarding claim 35, Eyuboglu discloses the apparatus of claim 34 connected to a network in which each of the carriers comprises an operating frequency (Paragraph [0021]; uses an operating frequency that conforms to the EV-DO standard).

Regarding claim 36, Eyuboglu discloses the apparatus of claim 34 connected to a network in which radio nodes in the first subnet are configured in accordance with a 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

Regarding claim 37, Eyuboglu discloses an apparatus (Abstract) comprising means for maintaining an open traffic channel with an access terminal when the access terminal moves from a coverage area of a first subnet where the apparatus is located to a coverage area of a second subnet and the access terminal uses a carrier in the first subnet that cannot be used in the second subnet (Abstract, Fig. 1 and Paragraphs [0015] and [0080]; uses software instructions to allow a terminal access to other subnets in other coverage areas).

Regarding claim 38, Eyuboglu discloses the apparatus of claim 37 connected to a network in which each of the carriers comprises an operating frequency (Paragraph [0021]; uses an operating frequency that conforms to the EV-DO standard).

Regarding claim 39, Eyuboglu discloses the apparatus of claim 37 connected to a network in which radio nodes in the first subnet are configured in accordance with a 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

Regarding claim 40, Eyuboglu discloses a system (Abstract) comprising, a packet data serving node connected to a network (Abstract and Paragraph [0025]; communicates with packets); at least two subnets, each subnet including, at least one radio node controller connected to the packet data serving node (Figs 1-2; has a RNC connected to the packet node) and, at least one radio node connected to a radio node controller in the same subnet (Figs. 1-2; has two RNs connected to the RNC), in which a first radio node controller located in a first subnet maintains an open traffic channel with an access terminal when the access terminal moves from a coverage area of a first subnet to a coverage area of a second subnet and when the access terminal uses a carrier in the first subnet that cannot be used in the second subnet (Abstract, Fig. 1 and Paragraphs [0015] and [0080]; uses software instructions to allow a terminal access to other subnets in other coverage areas).

Regarding claim 41, Eyuboglu discloses the system of claim 40 in which each of the carriers comprises an operating frequency (Paragraph [0021]; uses an operating frequency that conforms to the EV-DO standard).

Regarding claim 42, Eyuboglu discloses the system of claim 40 in which radio nodes in the first subnet are configured in accordance with a 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

(Cont. in Next Supplemental Box)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2006/047524

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Previous Supplemental Box:

Regarding claim 43, Eyuboglu discloses an apparatus comprising a processor (Paragraph [0015]; uses a data processing apparatus), memory (Paragraph [0067]; the RNC Resource Control Agent is responsible for storing session information), including software to provide instructions to the processor to maintain an open traffic channel with an access terminal when the access terminal moves from a coverage area of a first subnet where the apparatus is located to a coverage area of a second subnet (Abstract, Fig. 1 and Paragraphs [0015] and [0080]; uses software instructions to allow a terminal access to other subnets in other coverage areas) and radio nodes in the first subnet are configured in accordance with a 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

Regarding claim 44, Eyuboglu discloses an apparatus comprising means for maintaining an open traffic channel with an access terminal when the access terminal moves from a coverage area of a first subnet where the apparatus is located to a coverage area of a second subnet (Abstract, Fig. 1 and Paragraphs [0015] and [0080]; uses software instructions to allow a terminal access to other subnets in other coverage areas) and radio nodes in the first subnet are configured in accordance with a 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

Regarding claim 46, Eyuboglu discloses a system comprising, a packet data serving node connected to a network (Abstract and Paragraph [0025]; communicates with packets); at least two subnets, each subnet including, at least one radio node controller connected to the packet data serving node (Figs 1-2; has a RNC connected to the packet node) and, at least one radio node connected to a radio node controller in the same subnet (Figs. 1-2; has two RNCs connected to the RNC), in which a first radio node controller located in a first subnet maintains an open traffic channel with an access terminal when the access terminal moves from a coverage area of a first subnet to a coverage area of a second subnet (Abstract, Fig. 1 and Paragraphs [0015] and [0080]; uses software instructions to allow a terminal access to other subnets in other coverage areas) and radio nodes in the first subnet are configured in accordance with a 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

Claims 16, 18, 45 and 47 lack an inventive step under PCT Article 33(3) as being obvious over Eyuboglu et al. (US 2004/0214574 A1; Eyuboglu).

Regarding claims 16, 18, 45 and 47, Eyuboglu discloses the methods apparatus and system of claims 15, 17, 43 or 44, and 46. Eyubolu does not explicitly disclose in which radio nodes in the first subnet are configured in accordance with the 1xEV-DO Rev-A standard and radio nodes in the second subnet are configured in accordance with the 1xEV-DO Rev-0 standard. However configuring subnets to operate over different versions of a standard is a known practice in the art. Furthermore, the specifics (having a first subnet configured in accordance with the 1xEV-DO Rev-A standard and radio nodes in the second subnet are configured in accordance with the 1xEV-DO Rev-0 standard) is a matter of design choice. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein a first subnet is configured in accordance with the 1xEV-DO Rev-A standard and radio nodes in the second subnet are configured in accordance with the 1xEV-DO Rev-0 standard in the invention of Eyuboglu, so that the system can operate over multiple standards.

Claims 1-47 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article," "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report and the written opinion of the International Searching Authority, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only (see *PCT Applicant's Guide*, Volume I/A, Annexes B1 and B2).

The attention of the applicant is drawn to the fact that amendments to the claims under Article 19 are not allowed where the International Searching Authority has declared, under Article 17(2), that no international search report would be established (see *PCT Applicant's Guide*, Volume I/A, paragraph 296).

What parts of the international application may be amended ?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Preliminary Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When ? Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments ?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How ? Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments ?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)). The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

If a demand for international preliminary examination is made, the written opinion of the International Searching Authority will, except in certain cases where the International Preliminary Examining Authority did not act as International Searching Authority and where it has notified the International Bureau under Rule 66.1bis(b), be considered to be a written opinion of the International Preliminary Examining Authority. If a demand is made, the applicant may submit to the International Preliminary Examining Authority a reply to the written opinion together, where appropriate, with amendments before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later (Rule 43bis.1(c)).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the *PCT Applicant's Guide*, Volume II.